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**Tomographic SXR emissivity measurements on MST**[1] P. FRANZ, F. BONOMO, Consorzio RFX, Padova, Italy, M.B. MCGARRY, B.E. CHAPMAN, J.A. GOETZ, D.J. DEN HARTOG, University of Wisconsin-Madison — We present a survey of soft x-ray (SXR) measurements in standard and improved confinement plasmas in MST. Data are collected by a SXR tomographic diagnostic made of four 20-channel probes installed on a cross-section of the MST torus. The plasma has been analyzed using different thicknesses of Be foil filters, with values ranging between 15 and 821 microns, in order to select various energy ranges in the SXR spectrum. Correlation of the reconstructed SXR emissivity distributions with magnetic mode measurements enables investigation of MHD core dynamics in MST plasmas. For example during QSH (when one $m = 1$ tearing mode dominates the MHD magnetic spectrum and all remaining modes have reduced amplitudes), SXR tomographic reconstruction shows a more emissive structure on top of a symmetric profile. Data have been taken in the *one-color* configuration (same Be filter in all probes), *two-color* (two pairs of Be foils in the four cameras) and *multicolor* (four different Be filters). The *one-color* configuration measures only SXR emissivity, while the *two-color* configuration with thicker filters allows a reconstruction of the electron temperature from measurement of bremsstrahlung.

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